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PERFORMANCE OF AUTOMATIC COMPRESSOR VALVES

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The flow and force characteristics of disc vlaves are investigated using test rigs simulating rapid opening and closing of the valve. The instrumentation involves sub-minature cross-wire anemometer probes which enable two-dimensional plots of gas flow in an axial/radial plane to be drawn.

The problem of force measurement is tackled by using quartz transducers in a "back-to-back" arrangement which eliminates the acceleration component of the transducer output. The presence of the Coanda effect during the opening phase and the relationship between the various parameters when utilizing measured dynamic and "quasi-static" coefficients are discussed.